



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,215	02/19/2004	James A. McClain	030900	5338
41835	7590	07/13/2005		
KIRKPATRICK & LOCKHART NICHOLSON GRAHAM LLP HENRY W. OLIVER BUILDING 535 SMITHFIELD STREET PITTSBURGH, PA 15222			EXAMINER WARD, PAUL V	
			ART UNIT	PAPER NUMBER
			1623	

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/782,215	Applicant(s) MCCLAIN, JAMES A.	
	Examiner PAUL V. WARD	Art Unit 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Request to Withdraw the Finality of the Rejection

Applicant's request to withdraw the finality of the rejection that was mailed in an Office Action dated March 2, 2005 is granted because the Examiner included a new ground of rejection.

Response to Amendment filed April 26, 2005, Regarding

Claim Rejections - 35 USC § 102

1. **Status.** The rejection of claims 1-27 under 35 U.S.C. 102 set forth in the Office Action date March 2, 2005 has been maintained for the reasons of record and for the reasons set forth herein.

Applicant's arguments, filed April 26, 2005, have been fully considered but they are not persuasive.

Applicant asserts that Ohkuma provides no teaching of a relationship between reaction temperature and an optimum pH during the formation of resistant starch, and thus, contends that Ohkuma does not teach each and every element of the claimed invention. Applicant's argument is inexact and misplaced.

Ohkuma discloses a method for producing a resistance starch by selecting the reaction temperature, acidifying the starch with HCl, heating the acidified starch to the reaction temperature, and maintaining the acidified starch close to the reaction temperature to avoid coloring. (See Col. 5, line 50 to Col. 6 line 65). Additionally, in column 23, line 37, Ohkuma emphasizes that the white decreased in inverse proportion to the heating temperature or heating time, and figures 2 and 3 demonstrate that the

Art Unit: 1623

degree of coloration at pH 4.5 is lower than the degree in a reaction at pH 6.5. Further, Ohkuma clearly shows that resistant starch maintains a "whiteness" level between 12.3 and 66 when measured with a photoelectric whiteness meter. (See Example 5 and Figures 2 and 3).

The method of Ohkuma requires the resistant starch to be heated while adding an acid. The reaction temperature ranges from 120-200°C, preferably between 140-180 °C. When the temperature exceeds 170 °C, the product contains an increased amount of colored substance. In column 23, line 15, experimental Example 4, two samples are prepared by heating at 130 and 140°C that contains a whiteness of 66% and 50.5%. It is emphasized that the whiteness decreased in inverse proportion to the heating temperature or heating time, and it is clear from Figure 2 and 3 that the degree of coloration at pH of 4.5 is lower than the degree in a reaction at pH of 6.5.

It is apparent that Ohkuma teaches the same method for producing resistant starch by selecting a reaction temperature, acidifying the starch, heating the starch to the same reaction temperature range of 120-20 °C (preferably 140-180°C), and maintaining the acidified starch close to the reaction temperature to avoid coloring. Since Okuma teaches the inherent relationship between reaction temperature and an optimum pH during the formation of resistant starch, Applicant's claims are anticipated, and thus, the rejection of the claims under 35 U.S.C. 102(b) is maintained for the reasons of record as set forth today and in the Office Action dated March 2, 2005.

Response to Amendment filed April 26, 2005, Regarding

Claim Rejections - 35 USC § 103

2. **Status.** The rejection of claims 1-27 under 35 U.S.C. 103 set forth in the Office Action date March 2, 2005 has been maintained for the reasons of record and for the reasons set forth herein.

Applicant's arguments, filed April 26, 2005, have been fully considered but they are not persuasive.

Applicant asserts that Ohkuma combined with Bulfer does not disclose or suggest a resistant starch with a whiteness level above 66 and therefore the combined references do not teach all of the claim limitations. Applicant's argument is inexact and misplaced.

Ohkuma teaches a method for producing a resistant starch by (1) selecting a reaction temperature, (2) acidifying the starch, (3) heating the acidified starch to the reaction temperature, and (4) maintaining the acidified starch close to the reaction temperature to avoid coloring. (See Abstract and col. 1, lines 6-10). In column 6, line 41, Ohkuma teaches that HCl is used to acidify the starch. Additionally, in column 23, line 37, Ohkuma emphasizes that the whiteness decreased in inverse proportion to the heating temperature or heating time, and figures 2 and 3 demonstrate, from a comparative analysis, that the degree of coloration at pH 4.5 is lower than the degree in a reaction at pH 6.5. Further, in Table 13, Ohkuma discloses a whiteness level ranging from 12.3 to 66. (See Example 4). Still further, Ohkuma states, in column 6, line 66, that the reaction temperature is 120-200 C, and "more preferably 140-180 C", and in

Art Unit: 1623

Example 5, column 31, Ohkuma employs a starch having a moisture content of 5%.

Moreover, Ohkuma teaches that the resistant starch recovered is in an increased amount of at least 60%. (See column 5, line 7-10).

Ohkuma does not teach acidifying the starch with chlorine or monochloroacetic acid (Ohkuma uses HCl) nor a whiteness level above 66.

Bulfer discloses a resistant starch having a whiteness level of 80-90% using chlorine gas at an optimum pH of 2.7 and having the reaction temperature range of 94-177. (See col. 1 line 22-35, and col. 2-col. 3). In column 1, lines 28-35, Bulfer teaches that when using the chlorine gas, the products are improved in "whiteness". The pH of the starch is 2.7 and the reaction temperature varies between 94°C and 149°C. Thus, it is clear that the technical features, such as pH, temperature, time and whiteness, provides the same advantages as Applicant. (See col. 2-col. 3).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the methods Ohkuma to produce resistant starch by including a chlorine gas as a means to generate whiteness as suggested by Bulfer with a reasonable expectation of success. The motivation to do so is provided by Ohkuma to produce resistant starch and the teaching of Bulfer who teach the usefulness of including a chlorine gas to improve whiteness. Thus, the combined references teach and suggest all of the claim limitations. Therefore, the claimed invention as a whole is obvious over the combined teachings of the prior art. Applicant's claims are obvious, and thus, the rejection of the claims under 35 U.S.C. 103 is maintained for the reasons of record as set forth today and in the Office Action dated March 2, 2005.

Art Unit: 1623

Conclusion

Claims 1-27 are pending. Claims 1-27 are rejected. No claims are allowed.

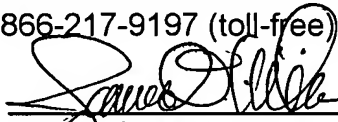
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL V. WARD whose telephone number is 571-272-2909. The examiner can normally be reached on M-F 8 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached on 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James O. Wilson
Supervisory Patent Examiner
Technology Center 1600